



# 1980 Annual Status Report

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## Training and education

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**Multiannual Programme  
of the Joint Research Centre  
1980 - 1983**

# **1980 Annual Status Report**

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## **Training and education**

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## EDUCATION AND TRAINING

1980

Research Staff: 9  
 Budget: 784.000 ECU  
 Projects:  
 16 Courses or Seminars, as listed in section 2

Programme Manager: B. HENRY  
 Commission of the European Communities  
 Joint Research Centre  
 Ispra Establishment  
 I-21020 Ispra (Varese), Italy

### 1. INTRODUCTION

The Education and Training Programme has been set up in recognition of the growing importance of continuing education in modern technological society. It is designed to improve the dissemination of scientific and technical knowledge in subjects related to the research activities of the JRC, to the potential external users: industries, public bodies, research and educational organizations, etc. . .

Moreover, owing to the number and the quality of specialists of the various fields covered by the courses who are brought to Ispra as lecturers or participants, this programme plays an important role in the integration of the research teams of the JRC with the European scientific world, and in the development of contacts and ties between European scientists active in a given field.

The Education and Training programme consists both of Courses giving the fundamentals of new or specialized disciplines, and Seminars at research level presenting the state of very rapidly evolving subjects. Though oriented towards applied science and technology, generally their scientific content is at a high level and addressed to persons having an university education, and often some experience in the field.

The lecturing staff consists both of invited experts and JRC staff members.

The courses, intended for external participation, are advertised accordingly in European Countries. A registration fee is requested from participants to cover part of the organisation costs.

### 2. RESULTS

During the year 1980, the following Courses and Seminars have been held:

#### NUCLEAR SCIENCE

"Engineering Aspects of Thermonuclear Fusion": Course, 5 days

"Radiation Shielding Methods": Course, 5 days

#### REACTOR SAFETY

"Multiphase Processes in LMFBR Safety Analysis": Seminar, 3 days

"Thermohydraulic Problems related to LWR Safety": Course, 5 days

"Computation of Transient Fluid-Structure Problems": Course, 5 days

"Safety Problems related to Sodium Handling": Course, 5 days



## ENGINEERING

"Risk and Safety Assessment in Industrial Activities": Seminar, 5 days

"In-Service Inspection Techniques for Power Reactor Pressure Vessels": Course, 3 days

"Training of Operating Personnel for Technologies with Hazard Potential: Theory and Practice": Seminar, 5 days

"Introduzione alla Meccanica della Frattura" (in Italian): Course, 5 days

## CHEMICAL SCIENCE AND TECHNIQUES

"Practical Glass Capillary Gas Chromatography": Course, 4 days

"Application of Mass Spectrometry to Trace Analysis": Course, 5 days

## HEALTH PHYSICS/FISICA SANITARIA

"Fondamenti di Radioprotezione" (in Italian): Course, 9 days

"Radioprotezione Fisica nelle Attività Medico-Sanitarie" (in Italian): Course, 5 days

"Fondamenti di Sorveglianza Medica della Radioprotezione" (in Italian): Course, 5 days

"Evaluation Methods of Internal Radioactive Contamination": Course, 5 days

Seven of these Courses were essentially repeats of courses held in previous years while the remaining nine were completely new. Among the latter, one should emphasize the first Ispra Course ever organized in the field of thermonuclear fusion which reflects the growing importance of this discipline in JRC research.

The place occupied by nuclear reactor safety in this programme should be pointed out: this is the first year in which the important effort devoted to this field in the research programme is shown in the education programme.

No course in the field of new energies took place in 1980, but this subject was well covered in 1979. It will also be covered in 1981.

Participation in the various courses (2146 participant - days) has varied widely, sometimes in a rather unexpected manner. However, as in the past, subjects having a potential interest for industry, and/or in which JRC research is already well established and integrated with European efforts have continued to produce the courses with the largest external appeal.

It is encouraging to note that the courses held in 1980 were judged "very satisfactory" or "satisfactory" by about 95% of those participants who answered the evaluation inquiries, and "unsatisfactory" by only 4%.

The work in publishing the Ispra Courses has been continued: 5 contracts for publications of courses of the 1980 programme have been allocated, which will bring to 16 the total number of Ispra Courses published or under publication.

Some progress has been made in the definition and the preparation of courses especially designed for the training of specialists from developing countries, as explicitly envisaged in the multiannual programme 1980 - 1983. A first course on "Managing National Energy Systems in Developing Countries" will take place in October 1981 and plans for courses on the applications of remote sensing techniques are currently being set up.

## 3. CONCLUSIONS

Although not as high as in 1977 or 1979, the external response to the courses, which is a good measure of the usefulness and the efficiency of this programme, has maintained a satisfactory level in 1980.

Progress in the diversification of the subjects, as a result of the development of new areas in JRC research, and of the objectives, with the implementation of a programme for developing countries, is encouraging.

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